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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/509,134

05/26/2005

Karl-Heinz Wilzer

P/37-182

1953

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EXAMINER

LISTVOYB, GREGORY

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

09/14/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/509,134	Applicant(s) WILZER, KARL-HEINZ	
	Examiner GREGORY LISTVOYB	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8,10-12 and 14-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8,10-12 and 14-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/18/2010 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8, 10, 12, 14-17 rejected under 35 U.S.C. 103(a) as being unpatentable over Wiltzer (US 6107449) (sited in the previous Office Action, necessitated by amendment) in view of Wiltzer et al (US 6136947), herein Wiltzer 2.

Wiltzer discloses a method for the continuous production of polyamide, starting with a material comprised of a salt of hexamethylenediamine with adipic acid (AH salt), water and lactam (see Claim 1, meeting the corresponding limitations of claims 8 and 12), which together form a prepolymer.

The method comprising:

a first stage wherein above atmospheric pressure is applied, in a first reactor having a first gas space, at temperatures between 180°C and 280°C (see Column 1, line 40), to the starting material, producing evaporated water containing reaction components, and, after passing the starting material through the first stage, feeding the prepolymer obtained due to the passage to at least one further stage comprising a second reactor (see column 1, line 65) having a second gas space and removing or expelling the evaporated water from the second gas space (see column 2, line 5), where connecting the first gas space with pressure control to the second gas space (see column 2, line 55), such that water evaporated in the first stage, with reaction components contained therein, is passed into the at least one further stage, said water being expelled only in the at least one further stage (see claim 1).

Regarding claim 8, Wilzer teaches that water and reaction products are separated with reflux column, with following recycling of caprolactam back into a reactor.

However, Wiltzer does not teach that the temperature of the upper end of the column is less than 120C.

It is known that boiling point of water at atmospheric pressure is 100C. The other constituents of a vapor phase have much higher boiling point. Therefore, in order to effectively remove water, the temperature of the upper end of the column should be slightly above 100C (i.e. 105-110C). Higher temperature is unnecessary, since it leads to an additional energy consumption.

It would have been obvious to a person of ordinary skills of the art at the time the invention was made to set temperature of upper end of the reflux, column at 105-110C • to effectively remove water with efficient energy consumption.

Regarding claim 17, Wiltzer discloses a reflux column, which separates monomers and water. Monomers return to the reactor, whereas water wasted with nitrogen stream (see Working Example 3).

In reference to claims 10 and 15, Wiltzer teaches 60-80% of AH-salt (see Claim 3) and particularly 80% AH salt (see Example 1).

Regarding claim 11, reflux column 19 (see Figure 1) operates at atmospheric pressure at 90C (see Examples 2-3).

Regarding Claim 14, Wiltzer does not teach that the amount of AH-salt is no more than 30%.

However, he teaches that the amount of comonomer caprolactam is within the range of 1-99% (see Column 3, line 55). It would have been obvious to a person of ordinary skills in the art that at high content of caprolactam monomer the amount of comonomer AH-salt is low (i.e. lower than 30%) in order to keep constant total monomer concentration in the reaction mixture.

Wiltzer does not disclose pressure control, which regulates water evaporation.

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Wiltzer 2 discloses the following process:

1. A process permitting the production of either polyamide 6, polyamide 6.6 or copolyamide in the same equipment which comprises preheating starting material to be treated in the process, introducing the preheated material into a pressure reactor, effecting polymerization in the pressure reactor under the pressure, temperature and residence time appropriate for the product, wherein the pressure is controlled to a value less than 20 bar (gauge pressure) by regulating the amount of the water present in the material being polymerized and maintaining the temperature in the range from 150 to 280° C., and postcondensing the polymerization product in at least one reactor at a pressure between 0 and 0.5 bar (gauge pressure) and a temperature in the range from 210 to 285° C., while adjusting the amount of material in the postcondensation reactor by controlling the amount of water in that material and expelling water in excess of the amount which establishes a desired final viscosity of the product of the process.

Wiltzer 2 discloses that regulation of water expelling allows to produce a polyamide with desired final viscosity (see claim 1).

Therefore, it would have been obvious to a person of ordinary skills in the art to use pressure control for regulating amount of water in the reactor in order to obtain a polyamide with desired viscosity.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct

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from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 8, 10, 12, 14-17 rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 3 of U.S. Patent No. 6107449 in view of US 6136947.

In particular, Claim 1 of the above patent claims a method for the continuous production of polyamides or copolyamides from the same ingredients as ones in the Application. Process takes place at high pressure within the same temperature range. Water is driven out with inert gas.

Claim 3 of the above patent claims the amount of AH-salt, which overlaps with the corresponding range of AH salt content in the Application examined.

US 6107449 does not claim the pressure control, which regulates water evaporation.

US 6136947 discloses that regulation of water expelling allows to produce a polyamide with desired final viscosity (see claim 1).

Therefore, it would have been obvious to a person of ordinary skills in the art to use pressure control for regulating amount of water in the reactor in order to obtain a polyamide with desired viscosity.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned U.S. Patent No. 6107449, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

Response to Arguments

Applicant's arguments filed on 6/18/2010 have been fully considered but they are not persuasive.

Applicant submits that "It is only in the melt drying section (10) where the prepolymer is heated to 280°C, and where the excess of water present in the prepolymer is evaporated."

However, the step above (melt drying step) can be considered as a part of the first stage of the claimed process. Preheating AH solution and following melt drying step produces the same prepolymer as one claimed in claim 8 of the Application examined.

Applicant argues that the melt drying section (10) does not have a gas space, and there is no pressure control on this process step.

This is incorrect. Melt drying section should have gas space in order to expel water liberated during the reaction.

Regarding pressure control, the new reference (Wiltzer 2) discloses the device above.

Applicant's arguments regarding Double Patenting are essentially the same as ones for rejection above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GREGORY LISTVOYB whose telephone number is (571)272-6105. The examiner can normally be reached on 10am-7pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GL
/GREGORY LISTVOYB/
Examiner, Art Unit 1796